



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/069,778	11/01/2013	Robert Charles Earhart	G4500 1040US.CP1	7955

26158 7590 11/30/2016  
WOMBLE CARLYLE SANDRIDGE & RICE, LLP  
ATTN: IP DOCKETING  
P.O. BOX 7037  
ATLANTA, GA 30357-0037

EXAMINER
----------

JOHNSON, JENNA LEIGH

ART UNIT	PAPER NUMBER
----------	--------------

1789

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

11/30/2016

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IPDocketing@WCSR.COM

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

*Ex parte* ROBERT CHARLES EARHART  
and MONTY HODGES

---

Appeal 2015-008324  
Application 14/069,778  
Technology Center 1700

---

Before KAREN M. HASTINGS, GEORGE C. BEST, and  
N. WHITNEY WILSON, *Administrative Patent Judges*.

BEST, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner finally rejected claims 1–24 of Application 14/069,778 under 35 U.S.C. § 103(a) as obvious. Final Act. (Oct. 6, 2014). Appellants<sup>1</sup> seek reversal of the Examiner’s decisions pursuant to 35 U.S.C. § 134(a). We have jurisdiction. 35 U.S.C. § 6(b).

For the reasons set forth below, we REVERSE the obviousness rejections.

---

<sup>1</sup> Glen Raven, Inc. is identified as the real party in interest. Appeal Br. 1.

## BACKGROUND

The '778 Application describes permeate carrier fabrics for membrane filters. Spec. 1:8–9. According to the Specification, membrane filters generally comprise spiral wound elements such as membranes and permeate carrier fabric. *Id.* at 1:14–15. The permeate carrier fabric is placed between membrane layers and allows permeate to flow between adjacent membranes. *Id.* at 1:19–21.

Claim 1 is representative of the '778 Application's claims and is reproduced below from the Claims Appendix to the Appeal Brief:

1. A permeate carrier fabric for placement between adjacent filter membranes of reverse osmosis, nanofiltration, ultrafiltration, or microfiltration systems, comprising:
  - a) at least some monofilament synthetic yarn ends selected from the group consisting of polyester and nylon,
  - b) the monofilament synthetic yarn being between 10 and 40 denier,
  - c) whereby the permeate carrier fabric is a tricot knit fabric formed of the monofilament synthetic yarn, the tricot knit fabric having raised rows of stitches that form continuous channels along a face of the fabric for flow of fluid being filtered by the adjacent filter membranes; and
  - d) whereby the permeate carrier fabric is configured to support adjacent filter membranes while reducing the blockage of permeate flow.

Appeal Br. 15 (Claims App.).

## REJECTIONS

On appeal, the Examiner maintains the following rejections:

1. Claims 1, 2, 9, 10, 17, and 18 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kihara,<sup>2</sup> Meyer,<sup>3</sup> and Keep.<sup>4</sup> Ans. 2.
2. Claims 3, 4, 11, 12, 19, and 20 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kihara, Meyer, Keep, and Hodge.<sup>5</sup> Ans. 5.
3. Claims 5–8, 13–16, and 21–24 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kihara, Meyer, Keep, Hodge, and Glenn.<sup>6</sup> Ans. 6.

## DISCUSSION

Appellants argue for the reversal of the obviousness rejections of dependent claims 2–8, 10–16, and 18–24 and independent claims 9 and 17 on the basis of limitations present in independent claim 1. (Claims 9 and 17 have similar corresponding limitations). *See* Appeal Br. 6–14; Reply Br. 2–5. We, therefore, limit our analysis to claim 1 for the obviousness rejections of these claims. Claims 2–24 will stand or fall with claim 1. 37 C.F.R. § 41.37(c)(1)(iv).

---

<sup>2</sup> US 6,277,282 B1, issued Aug. 21, 2001.

<sup>3</sup> US 3,791,178 B2, issued Feb. 12, 1974.

<sup>4</sup> US 2004/0214984 A1, published Oct. 28, 2004.

<sup>5</sup> US 2005/0123750 A1, published June 9, 2005.

<sup>6</sup> US 2010/0051132 A1, published Mar. 4, 2010.

**Rejection 1.** In rejecting claim 1, the Examiner found that Kihara describes permeate liquid passage conduit **19** (“permeate carrier fabric” (claim1)), between reverse osmosis membranes **7** and **8**. Ans. 3 (citing Kihara Abstract, ll. 1–7). The Examiner further found that permeate liquid passage conduit **19** functions to “enhance the passage of the permeated liquid” and “support[] . . . [,]without impairing[,] the performance of” reverse osmosis membranes **7** and **8**. Ans. 3 (citing Kihara 1:45–53). The Examiner found that Meyer describes a knitted fabric formed of monofilament threads useful for filtering. Ans. 4. According to the Examiner, Meyer teaches that monofilament threads “predictably prevent blockage” because they do not absorb moisture and are reusable after washing or shaking. *Id.* (citing Meyer 1:5–12; 2:51–54); *see also* Meyer 1:40–44.

Based upon these findings, the Examiner concluded that it would have been obvious to one of ordinary skill in the art to form the knitted fabric of Kihara, wherein the fibers comprise monofilament fibers as taught by Meyer, motivated by the desire to form a conventional filter material comprising a fiber structure known in the art to predictably prevent blockage with the fiber as well as the ease of use of a monofilament fabric.

Ans. 4.

Appellants argue, *inter alia*, that the rejection of claim 1 should be reversed because: (1) the Examiner has not identified a sufficient motivation to establish a prima facie case of obviousness by combining Kihara and Meyer, Appeal Br. 9–11; Reply Br. 4–5, and (2) Meyer is non-analogous art and may not be used as part of an obviousness rejection, Appeal Br. 11–12; Reply Br. 4–5. For the purpose of this opinion, we assume *arguendo* that Meyer is analogous art and, therefore, is available for use in an obviousness

rejection. However, we do not reach the analogous art argument because we find Appellants' first argument convincing and reverse the rejection of claim 1 for that reason.

With regard to argument (1), Appellants further argue that the Examiner's combination of references fails to reasonably suggest a motivation to modify Kihara's permeate liquid passage conduit **19** because: (i) Kihara does not suggest a solution to the conduit layer problems addressed by the present invention, Reply Br. 5; *see* Appeal Br. 7, and (ii) a filter and a membrane have dissimilar functions; Meyer is only concerned with formation of a filter, which prevents objects from passing through it, Reply Br. 5; *see* Appeal Br. 8; 10–11.

Appellants are incorrect in arguing that a reference in the Examiner's proposed combination must identify or recognize the same problem addressed by the inventors. *Cross Med. Prods., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1323 (Fed. Cir. 2005) ("One of ordinary skill in the art need not see the identical problem addressed in a prior art reference to be motivated to apply its teachings."); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 419–20 (2007) ("In determining whether the subject matter of a patent claim is obvious, neither the particular motivation nor the avowed purpose of the patentee controls . . . . The first error of the Court of Appeals in this case was . . . holding that courts and patent examiners should look only to the problem the patentee was trying to solve.").

Nonetheless, we find the Examiner's proffered reason for combining Kihara with Meyer to be insufficient for the reasons set forth below.

To establish a *prima facie* case of obviousness, the Examiner must provide an adequate reason for a person of ordinary skill in the art at the time the invention to have modified the reference or combination of

references to arrive at the claimed invention. *See KSR*, 550 U.S. at 418 (“[I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”). In the absence of such an explanation, the rejection must be reversed. *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”); *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (“hindsight” is inferred when the specific understanding or principal within the knowledge of one of ordinary skill in the art leading to the modification of the prior art in order to arrive at appellant’s claimed invention has not been explained).

In this case, the Examiner has not explained why a person of ordinary skill in the art at the time of the invention would have formed the knitted fabric conduit **19** described in Kihara with monofilament fibers *used for conventional filters* as described in Meyer. The Examiner’s proffered motivation to combine Kihara with Meyer requires the ordinary skilled artisan to use Kihara’s permeated liquid passage conduit **19** as a filter. As Appellants argue, a permeate carrier does not filter; the permeate carrier channels permeate between filter membranes. *See* Appeal Br. 6; Reply Br. 2–3; *see also* Spec. 1:19–21, 2:3–5. Appellants contrast permeate carriers with filter membranes, which conventionally provide a barrier through which liquids may pass, but solids may not. *See* Appeal Br. 10–11; Reply Br. 2–3, 5. Thus, Appellants persuasively argue that Meyer, at best, provides motivation for modifying the fabric of a filter, but not the fabric of a permeate carrier. Appeal Br. 10; Reply Br. 5.

In rejecting claim 1, the Examiner is not free to ignore Kihara's focus on the non-filtering functions of the permeated liquid passage conduit. *See In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1332 (Fed. Cir. 2016) ("When the PTAB examines the scope and content of prior art, . . . it must consider the prior art 'in its entirety, i.e., as a *whole*.'" (quoting *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 (Fed. Cir. 1987))). The Examiner, therefore, must explain why a person of ordinary skill in the art, presented with Kihara's discussion of the conduit's importance in enhancing permeated liquid passage, yet silent as to any filtration function thereof, would have turned to the multi-layered knitted monofilament threads described in Meyer, which are useful for filtering blood and/or trapping solid particles, e.g., dust. *See* Meyer 2:24; 2:36–37; 2:32.

The Examiner has not provided the necessary explanation for modifying the combination of references in the proposed manner to arrive at the claimed invention. We, therefore, reverse the rejection of claims 1, 2, 9, 10, 17, and 18.<sup>7</sup>

**Rejection 2.** The Examiner rejected claims 3, 4, 11, 12, 19, and 20 as obvious over the combination of Kihara, Meyer, Keep, and Hodge. Ans. 5.

The Examiner's discussion of Hodge, *see id.*, does not provide the reasoning and explanation that was missing from **Rejection 1**. Accordingly, we also reverse the rejection of claims 3, 4, 11, 12, 19, and 20 as obvious.

---

<sup>7</sup> We express no opinion regarding the persuasiveness of Appellants' arguments that (i) the applied prior art fails to teach each and every element of the invention, Appeal Br. 9, and (ii) the Examiner's reliance on Keep requires improper hindsight, *id.* at 12–14.



**Rejection 3.** The Examiner rejected claims 5–8, 13–16, and 21–24 as obvious over the combination of Kihara, Meyer, Keep, Hodge, and Glenn. Ans. 6.

The Examiner’s discussion of Hodge and Glenn, *see id.*, does not provide the reasoning and explanation that was missing from **Rejection 1**. Accordingly, we also reverse the rejection of claims 5–8, 13–16, and 21–24 as obvious.

### CONCLUSION

For the reasons set forth above, we reverse the obviousness rejections based upon the combination of Kihara, Meyer, and Keep, either with or without: (i) Hodge or (ii) the combination of Hodge and Glenn.

REVERSED